

UNIVERSITI TEKNOLOGI MARA

**E-LEARNING COURSEWARE FOR
SOLVING A FUNDAMENTAL
SYSTEM OF LINEAR EQUATIONS
BY USING GAUSSIAN
ELIMINATION METHOD**

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COMPUTER SCIENCE**

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**E-Learning Courseware for solving a
fundamental system of linear equations
by using Gaussian Elimination Method**

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SUPERVISOR APPROVAL

The development of eLearning Courseware for solving a system of linear equation by using Gaussian Elimination Method

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This thesis was prepared under the supervision of the project supervisor, Miss Nurul Zahirah Binti Abd Rahim. It was submitted to the Faculty of Computer and Mathematical Sciences and was accepted in partial fulfilment of the requirements for the degree of Bachelor of Computer Science.

Approved by

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Project Supervisor

JANUARY 31, 2017

STUDENT DECLARATION

I certify that this thesis and the project to which it refers is the product of my own work and that any idea or quotation from the work of other people, published or otherwise are fully acknowledged in accordance with the standard referring practices of the discipline.

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ABSTRACT

Linear algebra is one of an important subject. This project is made to overcome students' difficulties in understanding and solving system of linear equations fundamentally since they were too depending on their lecturers. The e-Learning Courseware for Solving System of Linear Equations provides the solution by using Gaussian Elimination method. The fundamental system of equations with matrices of size two by two are considered. The multimedia elements such as colors, interaction, graphic, audio and text also being considered, hence they can learn in an enjoyable way. In this project, ADDIE model consists of five phases is used. The use case diagram, flowcharts and interface is designed to meet the requirements. The development of this project was done with the aid of notepad and google chrome with 64-bit operating system Windows 7. During implementation phase, the functionality testing is done to check whether all the buttons, links are functioning before distributed it to user. Usability testing was done in evaluation phase where users tested the completed application and gave their feedbacks through the questionnaire sheet. It is recommended that this application will be developed on mobile operating system supported by the multimedia elements such as animation and video for future enhancement.